

RE-MCC

Multi Connection Cabinet
for offshore wind turbines –
smart and modular



Current trend in TP e-package / REETEC integrated solution

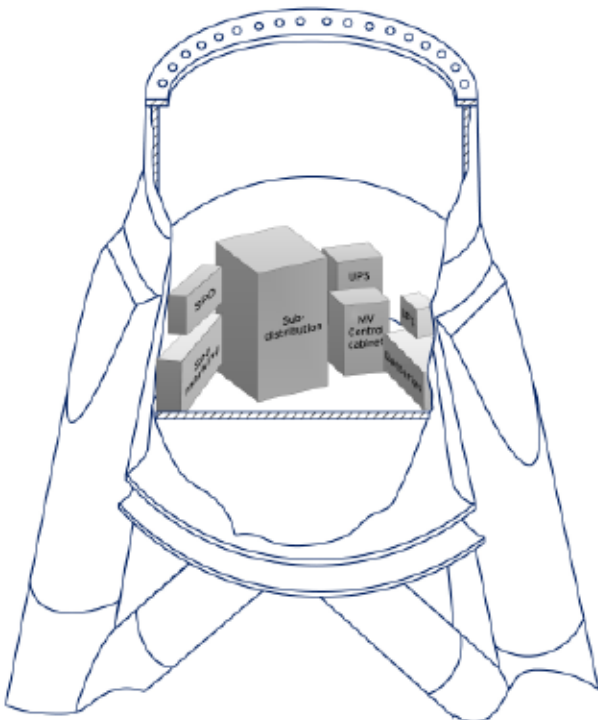
SYSTEMS TO INSTALL:

- Sea marking cabinet + UPS
- AC sub-distribution
- Fire detection system + UPS
- Lightning protection device
- Cameras control cabinet + UPS
- Service crane control cabinet + UPS
- Communication cabinet + UPS
- Foundation CMS + UPS
- etc.

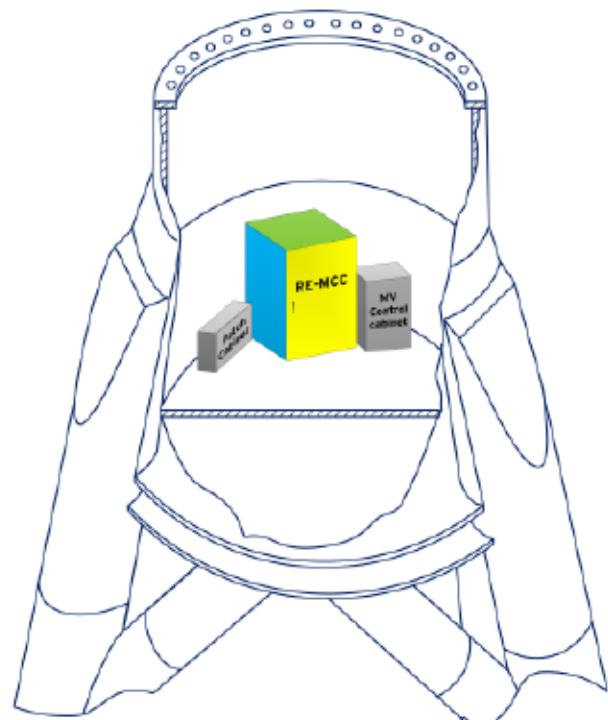
RESULTING DIFFICULTIES:

- Many interfaces and suppliers
- Different communication protocols
- Difficult monitoring

CURRENT TREND



REETEC DEVELOPMENT RE-MCC



The RE-MCC system ensures harmonised and safe operations of offshore wind turbines. With the RE-MCC, REETEC has developed a reliable, modular constructed technical solution in one cabinet. Within the system, any electrical component and electrical system can be integrated.

At present, different features on an offshore wind turbine, such as monitoring system, obstruction and navigation lights and fire detection, work independently from each other. Each has its own energy supply and backup system, with different control, communication, and engineering concepts.

The RE-MCC system is flexible, integrates new information and simplifies the installation of electrical components. In addition, it allows for a significant cost reduction for the hardware, installation, and commissioning, but most importantly significant time saving due to the efficiency of operation and maintenance.

The RE-MCC offers high reliability and availability due to full system monitoring with the appropriate protection, control and communication systems. It is a unique and innovative technical solution.

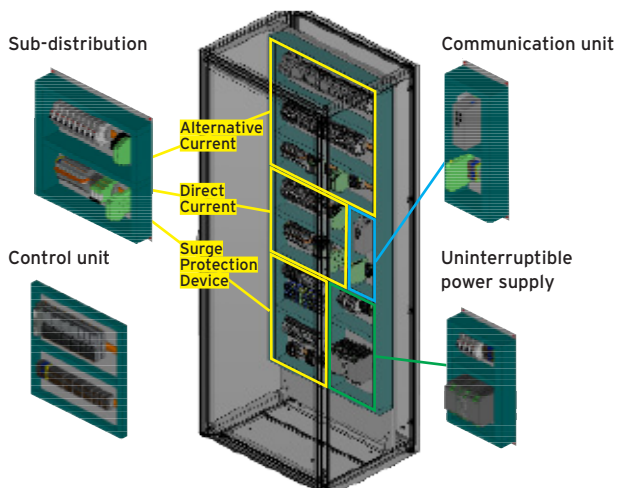


RE-MCC modules

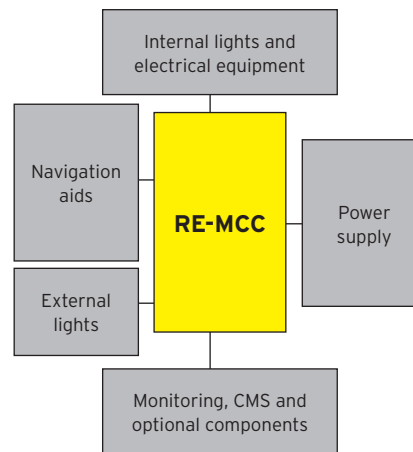
THE RE-MCC CONSISTS OF FOUR MODULES:

- **Sub-distribution unit:** AC and DC and surge protection devices are integrated in one enclosure
- **Control unit:** Control and monitoring of all electrical equipment
- **Communication unit:** Flexible communication and transfer of monitored data; remote control and status monitoring via SCADA
- **Uninterruptible power supply:** AC/DC converters with batteries management system

REDUNDANCY for all safety related systems



RE-MCC connections - Package solution



ALL ELECTRICAL EQUIPMENT IN THE TRANSITION PIECE CAN BE INTEGRATED INTO RE-MCC.

REETEC offers a complete solution for the electrical equipment of the WTG foundation structure:

- **RE-MCC**
- **Basic / final engineering**
- **Procurement**
- **Installation**
- **Service and maintenance**

Our preferred solution is to provide the complete package to reduce the number of interfaces, but each service can also be provided independently.

Key takeaways

RE-MCC BENEFITS

- Lifetime costs savings
 - Reduced number of interfaces
 - Easy planning, installation, commissioning and service
- State-of-the-art technology
- Advanced monitoring capabilities

ADDITIONAL SERVICES

- Full service: from engineering to maintenance

Technical data

Cabinet

- Size (H x W x D): 2000 x 800 x 500 or 1.600 x 600 x 500
- Enclosure: Stainless steel 1.4301 (AISI 304), 1.5 mm
- Mounting plate: Sheet steel 2.0 mm
- Weight: 131 kg

Environmental conditions

- Weather proof protection: IP66/67 / NEMA 12 / class III
- Environment / operating: -30 °C / 60 °C
- Ambient conditions: Humid air, salty, relative humidity up to 95 %

External connection

- Input: 690/400 V AC
690/400 V AC
- Output: 230/400 V AC
230 V
400 V
230 V
230 V AC / 24 V DC
230 V AC / 24 V DC
230 V AC / 24 V DC
24 V DC
24 V DC
24 V DC
24 V DC
24 V DC
24 V DC
24 (48) V DC
24 (48) V DC
- **Optional:**
(additional components) 24 (48) V DC
24 (48) V DC
24 (48) V DC

Energy consumption

- Power supply 40 - 65 kVA
- Emergency feed-in (40 kVA)
- Service crane 20 kW
- Crane heating 100 W
- CEE 16A and 32 A sockets 20 kW
- SCHUKO 2x16A sockets 7.2 kW
- Reeling lights 300 W
- Boat landing lights 800 W
- Internal Lights 220 W
- 5-Sm. LED lighting 6 W
- Close range marking 15 W
- Helicopter corridor lighting 80 W
- GPS 0.5 W
- AIS 5 W
- Smoke detectors 5 W
- Camera
- Condition monitoring systems
- Racon
- Fog horn
- etc.

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